What is claimed:

1. A therapeutic method for treating a mammalian prostate carcinoma, comprising the step of administering a therapeutically effective amount of cellular PAcP protein to the carcinoma.

2. The therapeutic method of claim 1, wherein the cellular PAcP protein is from a human.

3. The therapeutic method of claim 1, wherein the cellular PAcP protein is in a liposome.

4. The therapeutic method of claim 3, wherein the liposome is comprised of lipofectin.

5. The therapeutic method of claim 1, wherein the cellular PAcP is coupled to a monoclonal antibody.

6. The therapeutic method of claim 5, wherein the monoclonal antibody is immunologically specific to a human prostate cancer cell.

7. The therapeutic method of claim 1, wherein the step of administering the cellular PAcP protein is comprised of the steps of

A) administering a nucleic acid comprised of the coding sequence of cellular PAcP to the prostate carcinoma; and

B) allowing the cellular PAcP coding sequence to be expressed in the prostate carcinoma.

8. The therapeutic method of claim 7, wherein the nucleic acids administered are comprised of a pCMV-neo

expression vector operably linked to the coding sequence of cellular PAcP protein.

9. The therapeutic method of claim 7, wherein the coding sequence of cellular PAcP protein encodes Genbank Accession No. M34840.

10. The therapeutic method of claim 7, wherein the coding sequence of cellular PAcP is Genbank Accession No. M34840.

11. The therapeutic method of claim 7, wherein the nucleic acid administered comprises the coding sequence of cellular PAcP operably linked to a viral vector selected from the group consisting of herpes simplex virus, cytomegalovirus, murine leukemia virus, recombinant adeno-associated virus, a recombinant adenoviral vector, human immunodeficiency virus and feline immunodeficiency virus.

12. The therapeutic method of claim 7, wherein the administered nucleic acid comprises the coding sequence of cellular PAcP operably linked to a promoter selected from the group consisting of the cytomeglovirus promoter and the PAcP promoter.

13. A kit to carry out the therapeutic method of claim 1, comprising instructions for the therapeutic method of claim 1 and a container containing a reagent selected from the group consisting of purified cellular PAcP protein and a nucleic acid encoding cellular PAcP.

14. A method to diagnose androgen-insensitive prostate carcinomas comprising the step of determining the expression of cellular PAcP protein in the prostate

carcinoma, a decrease in the expression being indicative of the androgen-insensitive nature of the carcinoma.

15. The diagnostic method of claim 14, in which the step of determining the expression is comprised of the step of quantifying the concentration of cellular PAcP protein in the prostate carcinoma.

16. The diagnostic method of claim 15, where in cellular PAcP protein is quantified by an antibody immunologically specific to the cellular PAcP protein.

17. The diagnostic method of claim 14, in which the step of determining the expression is comprised of the step of quantifying the activity of cellular PAcP in the prostate carcinoma.

18. The diagnostic method of claim 17, wherein the activity of cellular PAcP is quantified by measuring acid phosphatase activity.

19. The diagnostic method of claim 14, in which the step of determining the expression is comprised of the step of quantifying the concentration of cellular PAcP mRNA in the prostate carcinoma.

20. The diagnostic method of claim 19, wherein the cellular PAcP mRNA is quantified by a method selected from the group consisting of PCR, Northern and Southern.

21. The diagnostic method of claim 19, wherein the cellular PAcP mRNA is quantified by its specific hybridization to a nucleic acid sequence selected from the group consisting of SEQ ID NO:3, SEQ ID NO:4 and at least 15 consecutive nucleotides of M34840.

22. A kit to diagnose androgen-insensitive prostate carcinomas, comprising instructions to carry the diagnostic method of claim 14 and a container containing a reagent selected from the group consisting of an antibody immunologically specific to cellular PAcP protein, at least one a nucleic acid that hybridizes at moderate stringency to Genbank Accession No. M34840 and a reagent to assay acid phosphatase activity.

23. A promoter region useful for prostate specific expression, comprising the regulatory regions of a PAcP gene.

24. The promoter of claim 23, which is the regulatory regions of a human PAcP gene.

25. The promoter of claim 24, which is comprised of at least 100 consecutive nucleic acids of a nucleic acid sequence selected from the group consisting of Genbank Accession No. U07083 and Genbank Accession No. X74961.

26. The promoter of claim 25, which is the -1356 to +87 nucleotide region, where nucleotide 1 is the transcription start site, of a nucleic acid sequence selected from the group consisting of Genbank Accession No. U07083 and Genbank Accession No. X74961.

~~26~~ 27. A xenograft animal model for studying human prostate cancers, comprising an athymic mammal hosting at least one transgenic human prostate carcinoma cell.

~~27~~ 28. The xenograft animal model of claim 26, wherein the mammal is a mouse.

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28. The xenograft animal model of claim 26, wherein the transgenic human prostate carcinoma cell is derived from a cell line selected from the group consisting of LNCaP, PC-3 and DU145.

29. The xenograft animal model of claim 26, wherein the transgenic human prostate carcinoma cell comprises an exogenous nucleic acid sequence encoding cellular PAcP protein.

30. The xenograft animal model of claim 29, wherein the exogenous nucleic acid sequence encodes human cellular PAcP protein.

31. The xenograft animal model of claim 29, wherein the exogenous nucleic acid expresses human cellular PAcP protein.

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33 32. A method for diagnosing prostate tumor progression in a patient, comprising determining levels of phosphotyrosyl-ErbB-2 levels in a prostate biopsy, elevated levels of phosphotyrosyl-ErbB-2 in said biopsy relative to normal prostate tissue being indicative of low PAcP activity and enhanced malignant progression of said prostate tumor.

34 33. A method as claimed in claim 32, wherein said ErbB-2 levels are determined by Western blotting.

35 34. A marker for diagnosis of prostate tumor progression, said marker comprising elevated phosphotyrosyl ErbB-2 levels as compared to levels present in normal prostate tissue controls.

AMENDED SHEET